

REMARKS/ARGUMENTS

Claims 5-16 are pending. Claims 5-9 and 12-14 have been rejected over JP 08-067413 (Mitsuyoshi et al.) in view of Park et al. and JP 10-247679A (Okuno et al.). Claims 10, 11, 15 and 16 have been rejected over the foregoing patents, further in view of Miyazaki et al.

Claim 5 is being amended as follows:

A substrate treating apparatus for performing a predetermined treatment of a plurality of substrates as immersed in a heated treating solution, comprising:

a controller for controlling a processing time for immersing said substrates to be treated, said controller comprising:

a substrate count acquiring device for acquiring a count of said substrates to be treated;

a storage device for storing beforehand a relationship between said count of the substrates and a processing time such that a processing time for immersing said substrates in the heated treating solution is progressively extended as said count of said substrates increases, and

wherein predetermined ranges of substrate counts are stored, such that a fixed processing time ~~for is assigned to a~~ an entire predetermined range of counts of said substrates corresponds to a predetermined immersion time for one of said counts in said predetermined range; and

a processing time determining device for determining said processing time according to the count of said substrates acquired by said substrate count acquiring device, by referring to said relationship stored in said storage device; and further comprising

a treating tank for immersing said substrates in the heated treating solution for the processing time determined by said processing time determining device.

The previous passage in claim 5, "such that a fixed processing time is assigned to a predetermined range of counts of said substrates" is considered to be slightly unclear and is being amended to read, in part, "wherein ... a processing time for an entire predetermined range of counts of said substrates corresponds to a predetermined immersion time for one of said counts in said predetermined range."

The above amendment clarifies claim 5 without changing the scope of the subject matter claimed. The amendment is based on the stored relationship between the number of substrates and the processing time described in the specification, page 19, lines 1-16, as well as pages 19-23

generally, and illustrated in Fig. 5.

In particular, please note page 19, lines 3-11, which states: “Similarly, the processing time (amount of correction) for six to 10 wafers is the same as for eight wafers, that for 11 to 15 wafers the same as for 13 wafers, that for 16 to 20 wafers the same as for 18 wafers, that for 21 to 25 wafers the same for 23 wafers, that for 26 to 30 wafers the same for 28 wafers, that for 31 to 35 wafers the same for 33 wafers, that for 36 to 40 wafers the same for 38 wafers, that for 41 to 45 wafers the same for 43 wafers, and that for 46 to 50 wafers the same for 48 wafers.”

As now claimed, the storage device of claim 5 has a relationship between the count of the substrates and the processing time stored beforehand, such that the processing time for immersing the substrate in the heated treating solution is progressively extended as the substrates increase in number, and such that a predetermined processing time is assigned to a predetermined range of counts of the substrates. None of the references (including particularly Park et al.) discloses or suggests a substrate treating apparatus having a storage device which stores such a relationship, and applies such relationship to control an immersion processing time as set forth in claim 5.

JP Patent No. 08-067413 (Mitsuyoshi et al.), the principal reference, merely describes a substrate count acquiring device and a treating device.

U.S. Patent No. 5,672,230 (Park et al.) merely states, “reference numeral 20 denotes a main computer connected to wet chemical cleaning stations 10 so as to display, store and process the data sensed by the sensors of wet chemical cleaning stations 10 and centrally manage the data.” This reference neither discloses nor suggests the above-mentioned feature of claim 5, whereby substrates are immersed in a heated treating solution for a processing time determined by a processing time determining device according to a count of the substrates.

In the Office Action, page 3, paragraph 9, the Examiner asserts, “Okuno et al. teach providing a controller comprising a storage device comprising previously stored means for determining a processing time based on the number of wafers to be processed for the purpose of executing a processing treatment without deteriorating the qualities of substrates when the number of substrates processed in a single treatment may vary (abstract).” However, Okuno et al. discloses only that a treatment changes according to the number of wafers processed. Okuno

et al. does not disclose or suggest the features now claimed in claim 5. Okuno et al. discloses nothing relating to the technical concept of the present invention that the processing time for immersing the substrates in the heated treating solution is progressively extended as the substrates increase in number.

Thus, the storage device recited in claim 5 stores beforehand a relationship between said count of the substrates and a processing time “such that a processing time for immersing said substrates in the heated treating solution is progressively extended as said count of said substrates increases, and wherein predetermined ranges of substrate counts are stored, such that a processing time for an entire predetermined range of counts of said substrates corresponds to a predetermined immersion time for one of said counts in said predetermined range”. None of the references (particularly Japanese Patent No. 10-247679A (Okuno et al.)) discloses or suggests a storage device storing such a relationship and thereby controlling a processing time determining device.

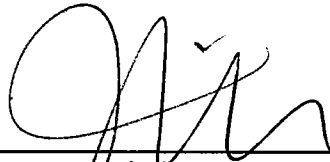
Paragraphs 9 and 10 of the Office Action are not fully understandable and accordingly must be respectfully traversed. The Examiner seems to be arguing that the art suggests “previously stored means for determining a processing time...,” and that such suggestion suggests combining Mitsuyoshi et al., Park et al. and Okuno et al. However, no “previously stored means” is recited or even paraphrased in claim 5. Thus, it is considered that the Examiner has not fully addressed the actual claim language, and moreover has not provided a reasonable basis for combining the references. Further, as explained above, even if combined the three references would not add up to the subject matter now recited in claim 5.

For the reasons noted above, none of the references, considered individually or in combination, disclose or suggest the characterizing portion of claim 5 in the subject application. Thus, claim 5 in the subject application is unobvious over the references cited. Dependent claims 6-16 are also unobvious over the references, for at least the same reasons, as well as for patentable subject matter stated therein.

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